

# Chapter 9

## Effects Determination Conclusion

### 9.1. Species

The purpose of this ASIP is to review the proposed Environmental Water Account in sufficient detail to determine to what extent the Proposed Action may affect any threatened, endangered, proposed, or sensitive species within the project area. This section summarizes the environmental setting, analysis, and effects determination presented in Chapters 3 and 4.

#### 9.1.1 Summary of Effects

##### 9.1.1.1 Federal Covered Species

The Proposed Action may affect but is not likely to adversely affect seven federally listed species through direct and indirect effects (see Table 9-1).

The Bay-Delta and its tributaries provide habitat for several special-status anadromous and estuarine fish species. Effect indicators such as water temperature and flows were used to evaluate if the Proposed Action would have an adverse effect on the species' habitat and range. Changes in river flows and water temperatures during certain periods of the year could potentially affect spawning, fry emergence, and juvenile emigration. Delta outflow, X<sub>2</sub> location, E:I ratio, and frequency and magnitude of reverse flows (QWEST) are indicators of fishery habitat quality and availability within the Delta. Habitat conditions within the Delta are important to fish and macroinvertebrates year-round, as many of the species spawn and utilize the estuary as larval and juvenile rearing habitat and/or as a migratory corridor.

##### *Central Valley Fall-run/Late-fall-run Chinook Salmon*

Flow reductions in the Sacramento, lower Feather, Yuba, lower American, Merced, and San Joaquin Rivers would not be of sufficient frequency or magnitude to beneficially or adversely affect attraction of immigrating adults, spawning, egg incubation, and initial rearing, juvenile rearing, or juvenile emigration. Flow increases in the Sacramento, lower Feather, Yuba, and lower American Rivers would not be of sufficient magnitude to beneficially or adversely affect attraction of immigrating adults or downstream passage of emigrating juveniles. Although flow increases in the Merced and San Joaquin Rivers in the fall would beneficially affect adult immigration and the availability of spawning habitat, changes in the flow pattern may raise the potential for redd dewatering. Potential reductions of agricultural return flows in Butte Creek would occur outside of the adult immigration or juvenile emigration time periods and downstream of spawning habitat, therefore neither beneficial nor adverse effects on fall-run Chinook salmon in Butte Creek are anticipated.

Changes in water temperature in the Sacramento, lower Feather, Yuba, lower American, Merced, and San Joaquin Rivers would not be of sufficient frequency or

magnitude to result in water temperatures above the upper end of the suitable range of temperatures required for adult immigration, spawning, egg incubation, and initial rearing, or juvenile rearing and emigration. However, there would be isolated occurrences when monthly mean water temperatures could be above the suitable range of temperatures for juvenile rearing and emigration (65°F) with the Proposed Action, relative to the basis of comparison.

In the Sacramento River, long-term average annual early lifestage survival of Central Valley fall-run Chinook salmon would be 91.2 percent under the basis of comparison and 91.1 percent with the Proposed Action. In the lower American River, long-term average annual early lifestage survival of fall-run Chinook salmon would be 90.6 percent under the basis of comparison and 90.5 percent with the Proposed Action. No change in Central Valley late-fall-run Chinook salmon long-term average annual early lifestage survival in the Sacramento River would occur with the Proposed Action, relative to the basis of comparison.

With implementation of the Proposed Action under both the Maximum and Typical Water Purchase Scenarios, long-term average Delta outflow would increase, relative to the basis of comparison, and monthly mean flows would be essentially equivalent to or greater than flows under the basis of comparison. The monthly mean position of  $X_2$  would move downstream or would not shift, relative to the basis of comparison, under both the Maximum and Typical Water Purchase Scenarios. The monthly mean E/I ratio would be identical to or less than (a reduced proportion of exports, relative to inflow) the E/I ratio under the basis of comparison in all of the months simulated for the February through June period, under both the Maximum and Typical Water Purchase Scenarios. (The relaxation of the E/I ratio is a discretionary action, taken as appropriate.) Implementation of the Proposed Action under both the Maximum and Typical Water Purchase Scenario would provide a benefit to reverse flows, relative to the basis of comparison, by decreasing the frequency of reverse flows and reducing the magnitude when reverse flows would still occur. Overall, such changes would be a benefit to juvenile salmonid emigration and the transport of planktonic eggs and larvae.

Annual salvage estimates exhibit a decrease in all 15 years simulated under both the Maximum and Typical Water Purchase Scenarios. Average annual salvage estimates under the Maximum Water Purchase Scenario would decrease by 1,123,826 Chinook salmon, relative to the basis of comparison. Average annual salvage estimates under the Typical Water Purchase Scenario would decrease by 895,433 Chinook salmon, relative to the basis of comparison. Although annual salvage estimates decrease, there would be isolated occurrences of monthly increases in Chinook salmon salvage in July through September under both the Maximum and Typical Water Purchase Scenarios. Therefore, EWA action may affect, but are not likely to adversely affect fall-run/late-fall-run Chinook salmon.

### ***Sacramento River Winter-run Chinook Salmon***

Flow reductions on the Sacramento River would not be of sufficient frequency or magnitude to beneficially or adversely affect attraction of immigrating adults, maintenance of sufficient flows for spawning, egg incubation, and initial rearing, or juvenile rearing and emigration. Flow increases would not be of sufficient magnitude to beneficially or adversely affect attraction of immigrating adults or downstream passage of emigrating juveniles. Flows on the Sacramento River would not be reduced below the NOAA Fisheries winter-run Chinook Salmon BO flow criterion more frequently with the Proposed Action, relative to the basis of comparison.

Changes in water temperature in the Sacramento River would not be of sufficient frequency or magnitude to result in water temperatures above the upper end of the suitable range of temperatures required for adult immigration and holding, spawning, egg incubation, and initial rearing, or juvenile rearing and emigration. Sacramento River water temperatures would not exceed the NOAA Fisheries winter-run Chinook Salmon BO temperature criterion more frequently with the Proposed Action, relative to the basis of comparison.

No change in long-term average annual early lifestage survival in the Sacramento River would occur with implementation of the Proposed Action.

With implementation of the Proposed Action under both the Maximum and Typical Water Purchase Scenarios, long-term average Delta outflow would increase, relative to the basis of comparison, and monthly mean flows would be essentially equivalent to or greater than flows under the basis of comparison. The monthly mean position of  $X_2$  would move downstream or would not shift and the monthly mean E/I ratio would be identical to or less, relative to the basis of comparison, under both the Maximum and Typical Water Purchase Scenarios. Implementation of the Proposed Action under both the Maximum and Typical Water Purchase Scenarios would decrease the frequency and magnitude of reverse flows, relative to the basis of comparison. Overall, such changes would be considered a benefit to juvenile salmonid emigration and the transport of planktonic eggs and larvae.

Annual salvage estimates exhibit a decrease in all 15 years simulated under both the Maximum and Typical Water Purchase Scenarios. Average annual salvage estimates under the Maximum Water Purchase Scenario would decrease by 1,123,826 Chinook salmon, relative to the basis of comparison. Average annual salvage estimates under the Typical Water Purchase Scenario would decrease by 895,433 Chinook salmon, relative to the basis of comparison. Although annual salvage estimates decrease, there would be isolated occurrences of monthly increases in Chinook salmon salvage under both the Maximum and Typical Water Purchase Scenarios. Therefore, EWA action may affect, but are not likely to adversely affect winter-run Chinook salmon.

### ***Central Valley Spring-run Chinook Salmon***

Flow reductions and increases in the Sacramento, lower Feather, and lower Yuba Rivers would not be of sufficient frequency or magnitude to beneficially or adversely

affect attraction and holding of immigrating adults, spawning, egg incubation, and initial rearing, and juvenile rearing or emigration. Potential reductions of agricultural return flows in Butte Creek would occur outside of the adult immigration or juvenile emigration time periods and downstream of spawning habitat, therefore neither beneficial nor adverse effects on spring-run Chinook salmon in Butte Creek are anticipated.

Changes in water temperature in the Sacramento, lower Feather, and lower Yuba Rivers would not be of sufficient frequency or magnitude to result in water temperatures above the upper end of the suitable range of temperatures required for adult immigration and holding, spawning, egg incubation, and initial rearing, or juvenile rearing and emigration.

Long-term average annual early lifestage survival in the Sacramento River would be 87.5 percent under the basis of comparison and 87.4 percent with the Proposed Action.

With implementation of the Proposed Action under both the Maximum and Typical Water Purchase Scenarios, long-term average Delta outflow would increase, relative to the basis of comparison, and monthly mean flows would be essentially equivalent to or greater than flows under the basis of comparison. The monthly mean position of  $X_2$  would move downstream or would not shift and the monthly mean E/I ratio would be identical to or less, relative to the basis of comparison, under both the Maximum and Typical Water Purchase Scenarios. Implementation of the Proposed Action under both the Maximum and Typical Water Purchase Scenarios would decrease the frequency and magnitude of reverse flows, relative to the basis of comparison. Overall, such changes are likely to benefit juvenile salmonid emigration and the transport of planktonic eggs and larvae.

Annual salvage estimates would decrease in all 15 years simulated under both the Maximum and Typical Water Purchase Scenarios. Average annual salvage estimates under the Maximum Water Purchase Scenario would decrease by 1,123,826 Chinook salmon, relative to the basis of comparison. Average annual salvage estimates under the Typical Water Purchase Scenario would decrease by 895,433 Chinook salmon, relative to the basis of comparison. Although annual salvage estimates decrease, there would be isolated occurrences of monthly increases in Chinook salmon salvage in July through September under both the Maximum and Typical Water Purchase Scenarios.

Therefore, EWA action may affect, but are not likely to adversely affect spring-run Chinook salmon.

#### ***Central Valley Steelhead***

Flow reductions and increases in the Sacramento, lower Feather, Yuba, lower American, and San Joaquin Rivers would not be of sufficient frequency or magnitude to beneficially or adversely affect attraction of immigrating adults, spawning, egg

incubation, and initial rearing, juvenile over-summer and fall/winter rearing, or juvenile emigration. Potential reductions of agricultural return flows in Butte Creek would occur outside the adult immigration or juvenile emigration time periods and downstream of spawning habitat, therefore neither beneficial nor adverse effects on steelhead in Butte Creek are anticipated.

Changes in water temperature in the Sacramento, lower Feather, Yuba, lower American, and San Joaquin Rivers would not be of sufficient frequency or magnitude to result in water temperatures above the upper end of the suitable range of temperatures required for spawning, incubation, and initial rearing, or juvenile rearing and emigration. However, there would be isolated occurrences when mean monthly water temperatures would be above the suitable range of temperatures for juvenile rearing and emigration (65°F) and egg incubation (56°F) with the Proposed Action, relative to the basis of comparison.

Based on the late-fall run Chinook salmon survival analysis for the Sacramento River, there would be no change in long-term average annual early lifestage survival in the Sacramento River with the Proposed Action, relative to the basis of comparison.

With implementation of the Proposed Action under both the Maximum and Typical Water Purchase Scenarios, long-term average Delta outflow would increase, relative to the basis of comparison, and monthly mean flows would be essentially equivalent to or greater than flows under the basis of comparison. The monthly mean position of X<sub>2</sub> would move downstream or would not shift and the monthly mean E/I ratio would be identical to or less, relative to the basis of comparison, under both the Maximum and Typical Water Purchase Scenarios. Implementation of the Proposed Action under both the Maximum and Typical Water Purchase Scenarios would decrease the frequency and magnitude of reverse flows, relative to the basis of comparison. Overall, such changes are likely to benefit juvenile salmonid emigration and the transport of planktonic eggs and larvae.

Annual steelhead salvage estimates exhibit a decrease in all 15 years simulated under both the Maximum and Typical Water Purchase Scenarios. Average annual salvage estimates would decrease by 28,928 and 20,386 steelhead under the Maximum and Typical Water Purchase Scenarios, respectively, relative to the basis of comparison. Although annual salvage estimates decrease, there would be isolated occurrences of monthly increases in steelhead salvage in July under both the Maximum and Typical Water Purchase Scenarios.

Therefore, EWA action may affect, but are not likely to adversely affect Central Valley steelhead.

#### ***Delta Smelt***

Changes in San Joaquin River flows would not occur during the spawning period with the Proposed Action, relative to the basis of comparison, therefore there would be no beneficial or adverse affects on delta smelt spawning and initial rearing.

With implementation of the Proposed Action under both the Maximum and Typical Water Purchase Scenarios, long-term average Delta outflow would increase, relative to the basis of comparison, and monthly mean flows would be essentially equivalent to or greater than flows under the basis of comparison. The monthly mean position of  $X_2$  would move downstream or would not shift and the monthly mean E/I ratio would be identical to or less, relative to the basis of comparison, under both the Maximum and Typical Water Purchase Scenarios. Implementation of the Proposed Action under both the Maximum and Typical Water Purchase Scenarios would provide a benefit to reverse flows, by decreasing the frequency and magnitude of reverse flows, relative to the basis of comparison. Overall, such changes would be likely to benefit juvenile salmonid emigration and the transport of planktonic eggs and larvae.

Annual salvage estimates exhibit a decrease in 14 of the 15 years simulated under the Maximum Water Purchase Scenario, with an overall estimated decrease of 135,887 delta smelt. Under the Typical Water Purchase Scenario, annual salvage estimates exhibit a decrease in all 15 years, with an overall estimated decrease of 93,690 delta smelt. Although annual salvage estimates decrease, there would be isolated occurrences of monthly increases in delta smelt salvage in July through September under both the Maximum and Typical Water Purchase Scenarios.

Therefore, EWA action may affect, but are not likely to adversely affect Delta smelt.

#### *Sacramento Splittail*

Changes in flows on the Sacramento, lower Feather, lower American, and San Joaquin Rivers would not be of sufficient frequency or magnitude to adversely affect the availability of inundated habitat for spawning. Potential reductions of agricultural return flows in Butte Creek would occur after the cessation of splittail spawning, therefore neither beneficial nor adverse effects on splittail spawning in Butte Creek are anticipated.

Changes in water temperature on the Sacramento, lower Feather, lower American, and San Joaquin Rivers would not be of sufficient frequency or magnitude to result in water temperatures above the upper end of the suitable range of temperatures required for spawning (68°F).

With implementation of the Proposed Action under both the Maximum and Typical Water Purchase Scenarios, long-term average Delta outflow would increase, relative to the basis of comparison, and monthly mean flows would be essentially equivalent to or greater than flows under the basis of comparison. The monthly mean position of  $X_2$  would move downstream or would not shift and the monthly mean E/I ratio would be identical to or less, relative to the basis of comparison, under both the Maximum and Typical Water Purchase Scenarios. Implementation of the Proposed Action under both the Maximum and Typical Water Purchase Scenarios would decrease the frequency and magnitude of reverse flows, relative to the basis of

comparison. Overall, such changes would be likely to benefit juvenile salmonid emigration and the transport of planktonic eggs and larvae.

Annual salvage estimates exhibit a decrease in 14 of the 15 years simulated under the Maximum Water Purchase Scenario, with an overall estimated decrease of 1,014,290 splittail. Under the Typical Water Purchase Scenario, annual salvage estimates exhibit a decrease in all 15 years, with an overall estimated decrease of 656,597 splittail. Although annual salvage estimates decrease in all but one year, there would be isolated occurrences of monthly increases in delta smelt salvage in July through September under both the Maximum and Typical Water Purchase Scenarios.

Therefore, EWA action may affect, but are not likely to adversely affect Sacramento splittail.

#### ***Aleutian Canada Goose***

During the winter, the Aleutian Canada goose forages on post-harvest wastegrain, among other items, in the Sacramento Valley. The EWA proposed action would reduce the overall amount of rice wastegrain forage available in the Sacramento Valley by 31 million pounds (Chapter 10 Section 10.2.6.1.7). However, because the goose's diet consists of a wide variety of marsh vegetation, algae, grass and sedge seeds, grain, berries, insects, and other terrestrial invertebrates (McCullough 2000) and the fact that these food sources are readily available throughout the wintering range of the goose, the loss of rice wastegrain is not considered an adverse affect. Crop idling actions taken by EWA agencies may affect but are not likely to adversely affect the Aleutian Canada goose.

#### ***Giant Garter Snake***

In some portions of the Sacramento Valley, the giant garter snake is highly dependent upon rice fields for the majority of its habitat requirements. Idling of rice croplands would temporarily reduce the amount of resting, feeding, escape cover, and migratory habitat available to the giant garter snake in the Sacramento Valley. Conservation measures (Section 4.19.4) were developed to help avoid or minimize effects to the giant garter snake and include annual appendages to the EWA biological opinion for rice idling activities. The USFWS and CDFG will also assess rice idling proposals within the context of progress being made toward implementing the ERP giant garter snake conservation strategy. With these measures, crop idling actions may affect but are not likely to adversely affect giant garter snake populations.

### **9.1.1.2 State Covered Species**

Direct and indirect effects of the Proposed Action may affect but are not likely to adversely affect the 16 State species covered in this document (see Table 9-1). Several of these state listed species such as the Chinook salmon are already discussed above in Section 9.1.1.1.

### ***Green Sturgeon***

The analysis of potential effects on Chinook salmon is considered a conservative (high) estimate of potential effects on green sturgeon. Because EWA actions may affect, but are not likely to adversely affect Chinook salmon, EWA actions may affect, but are not likely to adversely affect green sturgeon.

### ***Black Tern***

The black tern uses rice fields, primarily in Glenn and Colusa Counties in the Action Area for both nesting and foraging. Idling of rice crops would temporarily reduce the amount of this habitat available to the black tern during the summer breeding season. This may affect both nesting and foraging for the black tern. Conservation measures (Section 4.10.4) will help to avoid or minimize effects from the loss of nesting and foraging habitat on black terns. The EWA program may affect but is not likely to adversely affect the black tern.

### ***Black-crowned Night Heron***

The black-crowned night heron forages along irrigation canals and other waterways associated with rice crops throughout the Sacramento Valley. The acquisition of water from crop idling would potentially dry up irrigation and drainage ditches associated with rice crops. The lack of foraging habitat, particularly near rookeries during the breeding season, could potentially affect black-crowned night heron breeding efforts. However, conservation measures developed for the giant garter snake such as maintaining ditch aquatic habitat and minimizing the block size for idled riceland (Section 4.19.4) will avoid or minimize effects from the loss of foraging habitat on black-crowned night herons by keeping a prey base available and within a reasonable flight distance even during idling actions. The EWA program may affect but is not likely to adversely affect the black-crowned night heron.

### ***Great Blue Heron***

The great blue heron forages along irrigation canals and other waterways associated with rice crops throughout the Sacramento Valley. The acquisition of water from crop idling would potentially dry up irrigation and drainage ditches associated with rice crops. The lack of foraging habitat, particularly near rookeries during the breeding season, could potentially affect great blue herons. However, conservation measures developed for the giant garter snake such as maintaining ditch aquatic habitat and minimizing the block size for idled riceland (Section 4.19.4) will avoid or minimize effects from the loss of foraging habitat on great blue herons by keeping a prey base available and within a reasonable flight distance even during idling actions. The EWA program may affect but is not likely to adversely affect the great blue heron.

### ***Great Egret***

The great egret has similar life history requirements as the great blue heron. As such the great egret would be affected by EWA actions in the same manner. Conservation measures developed for the giant garter snake such as maintaining ditch aquatic habitat and minimizing the block size for idled riceland (Section 4.19.4) will avoid or minimize effects from the loss of foraging habitat on great egrets by keeping a prey

base available and within a reasonable flight distance even during idling actions. The EWA program may affect but is not likely to adversely affect the great egret.

#### ***Greater Sandhill Crane***

During the winter, the greater sandhill crane forages on waste grain remaining in fields following the harvesting of the rice crop, particularly in the Butte Basin. EWA actions would acquire water from idled rice croplands over the summer. The following winter, because of the lack of a rice crop, there would be no post-harvest rice waste grain on idled rice fields. This would reduce the overall amount of waste grain forage available in the Sacramento Valley. In the Butte Basin area the greater sandhill crane is often dependent on rice waste grain. Conservation measures have been developed to avoid or minimize the effects of this loss of forage on the greater sandhill crane. The Proposed Action may affect, but is not likely to adversely affect the crane.

#### ***Long-billed Curlew***

The Long-billed Curlew uses rice fields to forage for invertebrates during the winter. EWA would acquire water from idled rice croplands in the summer, temporarily reducing the overall amount of rice cropland available in the Sacramento Valley. The following winter, rice farmers would more than likely refrain from flooding their fields because of the lack of rice stubble to decompose. However, winter rains often provide sufficient water to promote the growth of invertebrates in croplands. Therefore, EWA actions may affect but are not likely to adversely affect the long-billed curlew.

#### ***Snowy Egret***

The snowy egret has similar life history requirements as the great blue heron and great egret and would be affected by EWA actions in the same manner. Conservation measures such as maintaining ditch aquatic habitat and minimizing the block size for idled riceland (Section 4.19.4) developed for the giant garter snake will avoid or minimize effects from the loss of foraging habitat on snowy egrets by keeping a prey base available and within a reasonable flight distance even during idling actions. Therefore, EWA actions may affect but are not likely to adversely affect the snowy egret.

#### ***Tricolored Blackbird***

The tricolored blackbird forages on rice grain along with insects, and often breeds in areas adjacent to rice fields. EWA acquisition of water through crop idling actions would temporarily reduce the amount of rice and insects available for blackbirds during its summer nesting season. The EWA proposed action would reduce the overall amount of forage habitat available in the Sacramento Valley. However, tricolored blackbirds often move from location to location and can relocate during the nesting season trying to take advantage of optimal habitat conditions. Also, conservation measures developed for the giant garters snake (Section 4.19.4) will help to avoid or minimize effects on tricolored blackbird foraging habitat. Therefore, EWA actions may affect but are not likely to adversely affect the tricolored blackbird.

### **White-faced Ibis**

The white-faced ibis uses rice fields to forage for invertebrates during the winter. EWA would acquire water from idled rice croplands in the summer, temporarily reducing the overall amount of rice cropland available in the Sacramento Valley. The following winter, rice farmers would more than likely refrain from flooding their fields because of the lack of rice stubble to decompose. However, winter rains often provide sufficient water to promote the growth of invertebrates in croplands and the seller would be encouraged to continue flooding idled rice fields during the winter. Therefore, EWA actions may affect but are not likely to adversely affect the white-faced ibis.

### **Western Pond Turtle**

The western pond turtle uses irrigation and drainage ditches adjacent to rice fields for resting and foraging habitat. The idling of rice croplands would mean the loss of irrigation and agricultural return flows within these ditches possibly adversely affecting the western pond turtle. Conservation measures (Section 4.20.4) were developed to ensure that the Proposed Action, although it may be likely to affect, would not adversely affect the western pond turtle.

**Table 9-1: Direct and Indirect Effects Analysis of Special-Status Species Within the Action Area.**

			Effects Analysis				
			Species				Critical Habitat/EFH
Common Name	Scientific Name	Status	No Effect	May Affect, Not Likely to Adversely Affect	May Affect, Likely to Adversely Affect	Beneficial Effect	May Adversely Modify
Central Valley Fall/Late-Fall Run Chinook Salmon	<i>Oncorhynchus tshawytscha</i>	C, CSC		X			
Sacramento River Winter Run Chinook Salmon	<i>Oncorhynchus tshawytscha</i>	E, CE		X			
Central Valley Spring-Run Chinook Salmon	<i>Oncorhynchus tshawytscha</i>	T, CT		X			
Central Valley Steelhead	<i>Oncorhynchus mykiss</i>	T		X			
Delta Smelt	<i>Hypomesus transpacificus</i>	T, CT		X			
Sacramento Splittail	<i>Pogonichthys macrolepidotus</i>	T, CT		X			
Green Sturgeon	<i>Acipenser medirostris</i>	CSC		X			

**Table 9-1: Direct and Indirect Effects Analysis of Special-Status Species Within the Action Area.**

			Effects Analysis				
			Species				Critical Habitat/EFH
Common Name	Scientific Name	Status	No Effect	May Affect, Not Likely to Adversely Affect	May Affect, Likely to Adversely Affect	Beneficial Effect	May Adversely Modify
Aleutian Canada Goose	<i>Branta canadensis leucopareia</i>	Delisted		X			
Black Tern	<i>Chlidonias niger</i>	CSC		X			
Black-crowned Night Heron	<i>Nycticorax nycticorax</i>	CS		X			
Great Blue Heron	<i>Ardea herodias</i>	CS		X			
Great Egret	<i>Casmerodius albus</i>	CS		X			
Greater Sandhill Crane	<i>Grus canadensis tabida</i>	CT/FP		X			
Long-billed Curlew	<i>Numenius americanus</i>	CSC		X			
Snowy Egret	<i>Egretta thula</i>	CS		X			
Tricolored Blackbird	<i>Agelaius tricolor</i>	CSC		X			
White-faced Ibis	<i>Plegadis chihi</i>	CSC		X			
Giant Garter Snake	<i>Thamnophis gigas</i>	T, CT		X			
Western Pond Turtle	<i>Clemmys marmorata</i>	CSC		X			

C= candidate species

CSC = California species of Special Concern

E= Endangered Species

CE = California Endangered Species

T = Threatened Species

CT = California Threatened Species

FP = California fully protected species

CS = California Sensitive Species

## 9.2 NCCP Communities

This section summarizes the environmental setting, analysis, and effects determination presented in Chapters 5 and 6.

NCCP communities that may be affected by EWA actions include Valley/Foothill Riverine, Montane Riverine, Valley/Foothill Riparian, Montane Riparian, Nontidal Freshwater Permanent Emergent Natural Seasonal Wetland, Managed Seasonal Wetland, and Seasonally Flooded Agriculture. Effects include the change in timing and amount of river flows, potentially altering riverine aquatic habitat and exacerbating effects caused by human-induced hydrologic changes on riparian

habitats. Effects also include the potential loss of water sources for wetland habitats through crop idling and groundwater substitution actions, and the loss of seasonally flooded agriculture habitat through crop idling. Affecting these communities may affect several special-status species; therefore, conservation measures have been developed and are outlined in Section 2.5.3.5 to avoid or minimize effects on these communities and their associated special-status species.